

Changing the Way We Look at Agriculture:

Opportunities for RDNs

January 26, 2015

Abigail Copenhaver, RDN, CDN
Amy Myrdal Miller, MS, RDN, FAND



@EatRightPRO

Objectives

- Describe the current state of US farming.
 - Identify at least two innovative advances in agriculture globally.
 - Name at least one action affiliates and DPGs can take to help members be more informed of agriculture practices.
-

Speakers



Abigail Copenhaver, RDN, CDN
Farmstead Nutrition and Consulting, LLC
Ivy Lakes Dairy, LLC



Amy Myrdal Miller, MS, RDN, FAND
Founder and President
Farmer's Daughter Consulting, LLC



Lisa Medrow, RDN, LD
Foundation Project Specialist
Academy of Nutrition and Dietetics Foundation

Future of Food Initiative

Academy of Nutrition and Dietetics Foundation



Academy of Nutrition
and Dietetics
Foundation

Future of Food Initiative

Future of Food

Improving Food Security: Dietitians Bring Nutrition E the Table

POSTED ON JUNE 14, 2012



Ethan Bergman, President of the Academy of Nutrition and Dietetics, addresses the Future of Food Conference in Washington, D.C. Photo courtesy of Washington Post Live.

By Ethan A. Bergman, PhD, RD, FADA, CD
President
Academy of Nutrition and Dietetics

Future of Food Resources for Members

- Hunger Actions and Resources added to www.kidseatright.org/volunteer
 - Toolkits www.kidseatright.org/volunteer
 - Hunger in Our Community. What We Can Do.
 - Smart Choices. For a Healthy Planet. (English & Spanish!)
 - Feeding America's Healthy Food Bank Hub www.healthyfoodbankhub.org
 - Food Insecurity and Food Banking Supervised Practice Concentration www.healthyfoodbankhub.org
-

Future of Food Education for Members

- Webinars www.eatrightfoundation.org
- Infographics www.eatrightfoundation.org

Nourish to Flourish

Food insecurity and being overweight are two of the biggest crises facing American kids today. But they don't need to be. The solution lies in understanding the facts.



U.S. Farming 101 for food and nutrition professionals

The Academy of Nutrition and Dietetics Foundation's Future of Food Initiative addresses industry members' interest in learning more about a safe, nutritious food supply. It's a challenge to have abundant, diverse and affordable food to grow food for the U.S. and the world.


Who Grows Our Food?
A Profile of American Farmers



- “Changing the Way We Look at Agriculture” 2015 Affiliate Presentations
 - 2014 FNCE Symposium: “The RDNs Guide to Plentiful, Nutrient Dense Food for the World”
 - 2015 FNCE Symposium “A Balanced Approach to Understanding the Science of Antibiotics in Animal Agriculture”
-

Future of Food Research Projects

- Indianapolis RD Parent Empowerment Program with supplemental food research project
- Foundation Agriculture, Nutrition, and Health Research Fellow: Chris Vogliano, MS, RD, LD
 - Consensus Conference & proceedings paper
 - Healthy Food for a Healthy Planet webpage working group
 - FNCE Symposium proceedings paper
 - Food Waste in the US manuscript & white paper
 - Food waste dietetic internship research project

**ARTICLE IN PRESS**

FROM THE ACADEMY

Plentiful, Nutrient-Dense Food for the World: A Guide for Registered Dietitian Nutritionists

Chris Vogliano, MS, RD, LD; Katie Brown, EdD, RDN, LD; Amy Myrdal Miller, MS, RDN; Dayna Green-Burgeson, RD; Abigail Andrew Copenhaver, RDN, CDN; Jennie Schmidt, MS, RD

A FEBRUARY 2014 SURVEY OF A representative sample of Academy of Nutrition and Dietetics (Academy) members showed high interest in learning more about domestic and global farming and food production practices, strategies for increasing global food security, care of animals raised for human consumption, and environmental considerations along the food supply chain. In response, the Academy produced a series of four educational webinars exploring the increasingly more complex relationship between agriculture and food and nutrition.

As a follow-up to the webinar series, the Academy Foundation hosted a symposium before the 2014 Food & Nutrition Conference & Expo in Atlanta, GA, titled "The RDN's Guide to Plentiful, Nutrient-Dense Food for

University's Paul H. Nitze School of Advanced International Studies, and William Weldon, PhD, vice president for Global Research and Development at Elanco Animal Health. They presented the current state of global food and nutrition security and explained the importance of innovative advances in agricultural productivity and environmental sustainability. The second half of the symposium featured four RDN farmers, each addressing a consumer question about farming that they are commonly asked, presenting the science supporting their answer to that question, and providing application suggestions for RDNs and other food and nutrition practitioners.

This article features symposium highlights from the both the food and nutrition security experts and the RDN farmers.

inadequate water and sanitation, poor soil quality and growing conditions, crop failure, food waste reduction, natural disasters, war, illness, lack of education, and unemployment.² Of the 7.2 billion people alive in the world today, 1.2 billion are living on less than an adjusted \$1.25/day.² One out of eight people cannot afford to purchase enough food to provide 1,800 kcal/day, which is less than what is required to support even a medium level of physical activity.³ This calorie deficit also leads to devastating malnutrition. For example, from the time of conception to age 24 months, malnutrition can cause permanent stunting of a child's mental and physical development, resulting in reduced learning capacity and labor productivity.⁴

Calories alone are not enough to

Last year our donors' generosity helped us award:

\$545,000 in student scholarships to 381 students

\$12,500 in student stipends to help students attend FNCE.

\$40,000 through Home Food Safety Challenge grants to dietetics students.

www.eatrightfoundation.org

Abigail Copenhaver, RDN, CDN

@DairyFarmerRDN



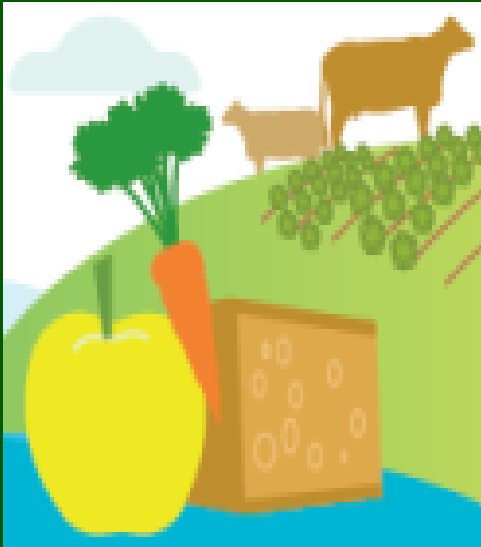
Disclosure

- Owner of Farmstead Nutrition & Consulting, LLC and Ivy Lakes Dairy, LLC
- Dietitian at Child Care Council (Rochester, NY)
- Member of Farm Bureau, Northeast Dairy Foods Association
- Consulting for the American Dairy Association and Dairy Council

Speaker: Abigail Copenhaver



US Farmers & the State of US Farming

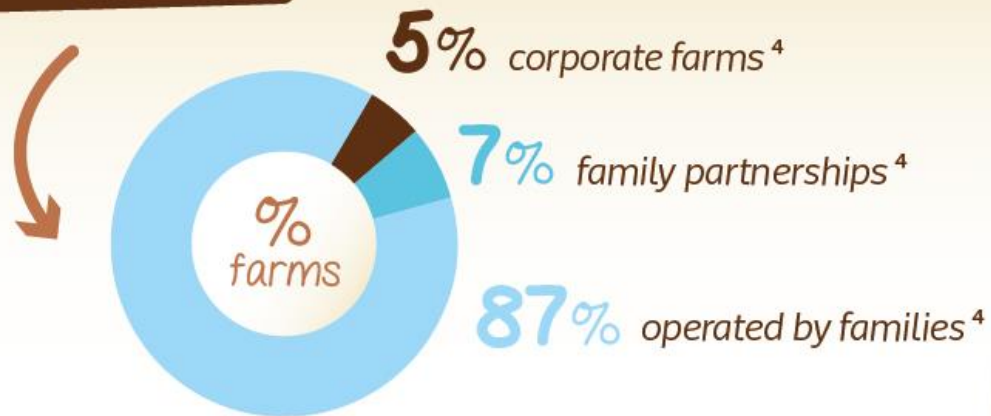


eat
right.

US Farming Facts^{1,2}

Fast Facts About U.S. Farms

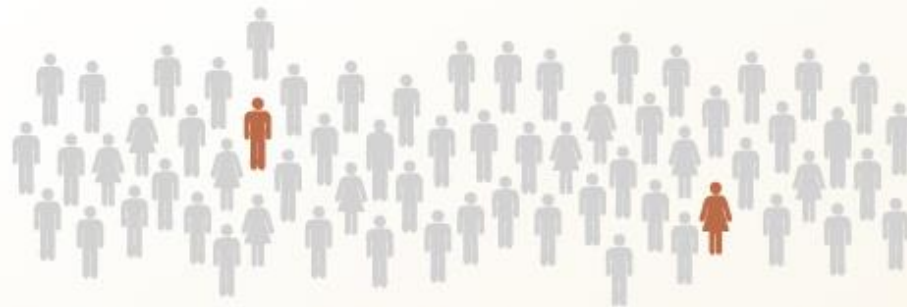
Most Farms
are **Family Farms**⁴



2.1 million farms in U.S.⁴

915 million farm acres in the U.S.⁵

US Farming Facts³



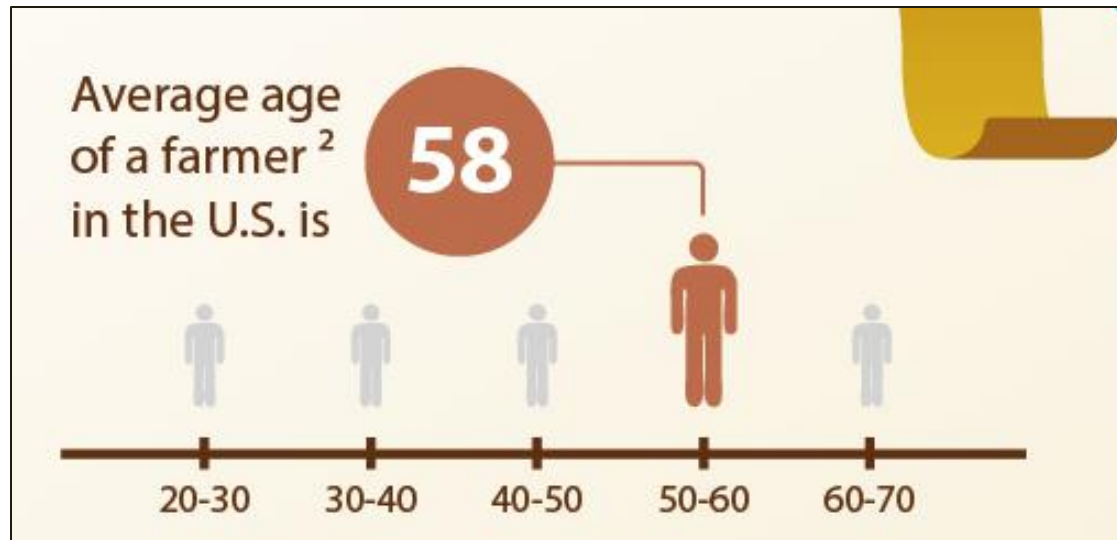
While less than **2%** of US population are farmers,
they help to feed 100% of the US population! ¹

US Farming Facts⁴

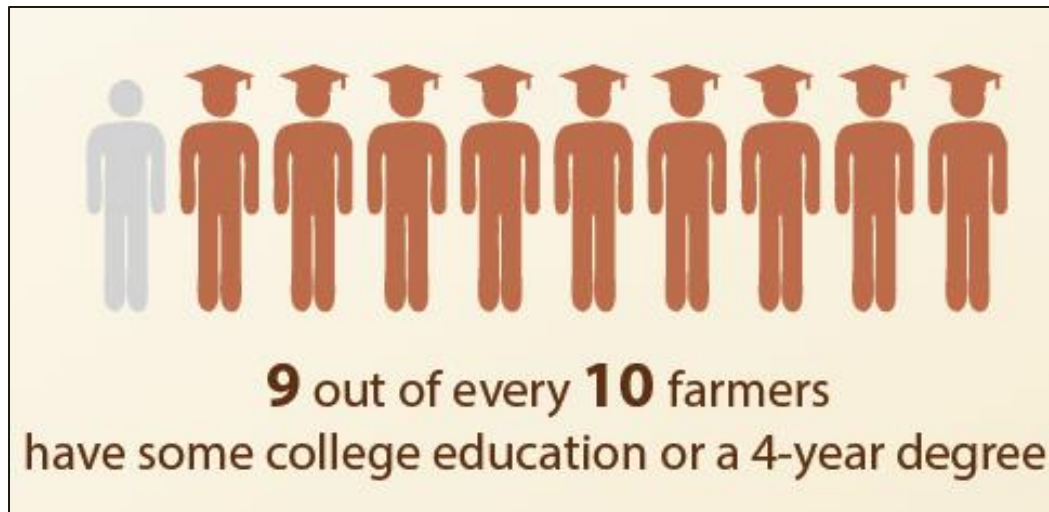


8.5 out of every **10** farmers is male ³

US Farming Facts⁵

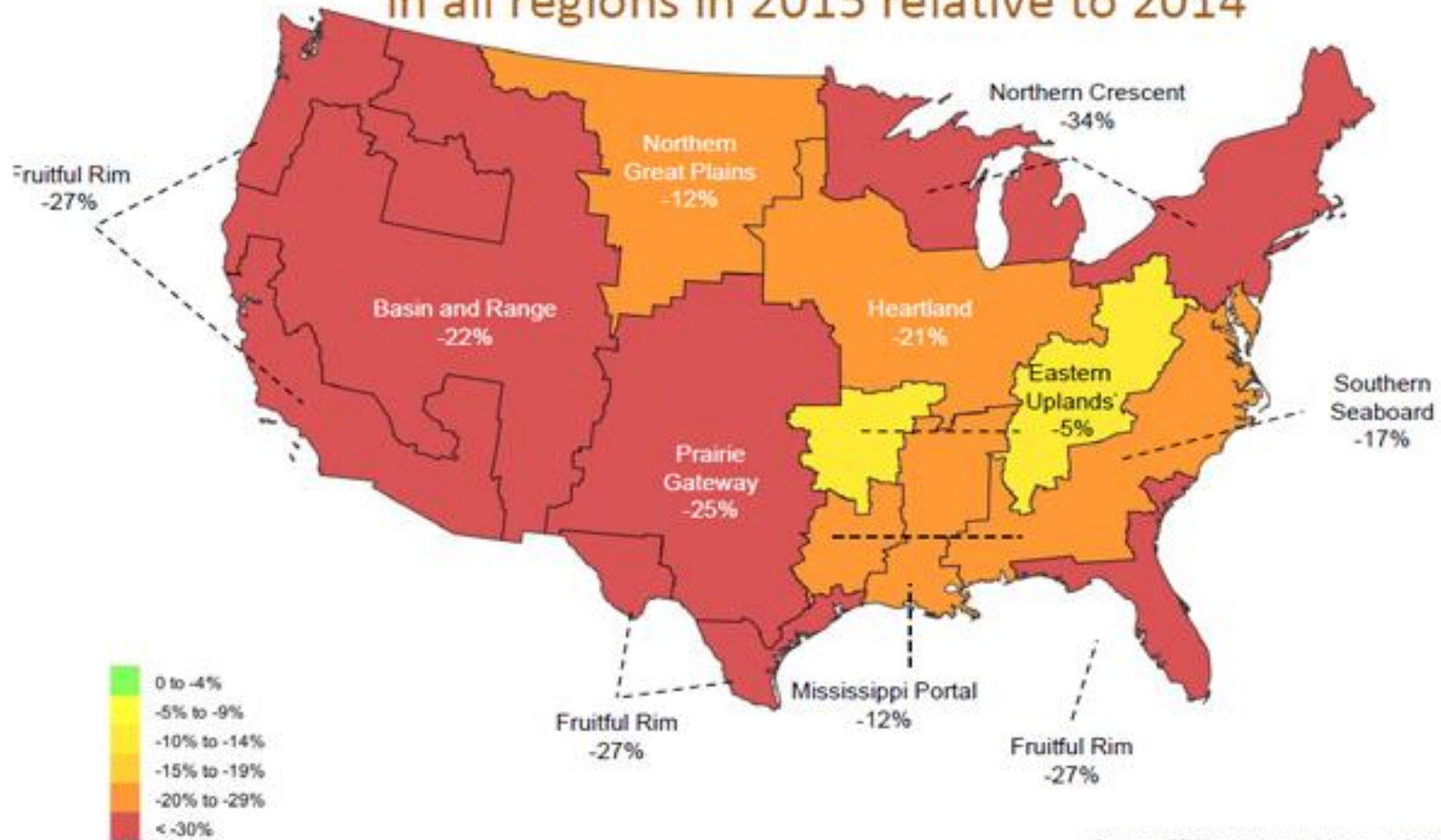


US Farming Facts^{4,6}



Forecasted Farm Economy⁷

Average net cash incomes are forecast down for farm businesses in all regions in 2015 relative to 2014



Source: ERS partial model based using the 2013 Agricultural Resource Management Survey (ARMS) and parameters from the sector forecasts. The model is static and therefore does not account for changes in crop rotation, weather, and other local production impacts that occurred after the base year.

Future Farmer Trends⁸



The Faces of U.S. Agriculture

The 2012 Census of Agriculture lets us know who is involved in U.S. agriculture – from family farmers to hired labor, and from new, beginning farmers to next-generation farmers. Census data help inform smart policymaking to benefit farmers and ranchers, their communities, businesses and industries.



58 YEARS

The average age of a principal farm operator. The average age is generally highest in the south, and lowest in the upper plains.



969,672

The number of all female farm operators in 2012. That's 30% of all farm operators in the United States.



Top 5 States by Total Number of Hispanic Farm Operators, 2012



3.2 MILLION

The number of all farm operators in the U.S. in 2012.

That's more farmers than the entire population of Iowa.



Down 3% from 2007.

22 PERCENT

The percent of all farmers in the U.S. who were beginning farmers in 2012.

That means 1 out of every 5 farmers operated a farm for less than 10 years.



87 PERCENT

The percent of farms that are operated by families or individuals in the U.S.

Of the total number of operators, 2.4 million live on their farms.



2.7 MILLION

The number of hired farm workers in 2012.

Up 4% from 2007.*

Hired farm workers account for less than 1% of all U.S. wage and salary workers but are vital to agriculture production.



257,454

The number of Millennial Generation farmers age 34 or younger in the U.S. in 2012.

That's more than 4 times the enrollment of Texas A&M University.



* Statistically significant change. Visit <http://bit.ly/AgCensusFAQs>.

http://www.agcensus.usda.gov/Partners/Infographics/Faces_of_Agriculture.pdf



Source: 2012 Census of Agriculture, May 2014

www.agcensus.usda.gov
U.S. Department of Agriculture
National Agricultural Statistics Service



Source: 2012 Census of Agriculture, May 2014

Future Farmer Trends^{8,9}

3.2 MILLION

The number of all farm operators in the U.S. in 2012.

That's more farmers than the entire population of Iowa.



Down 3% from 2007.

22 PERCENT

The percent of all farmers in the U.S. who were beginning farmers in 2012.



That means 1 out of every 5 farmers operated a farm for less than 10 years.

http://www.agcensus.usda.gov/Partners/Infographics/Faces_of_Agriculture.pdf

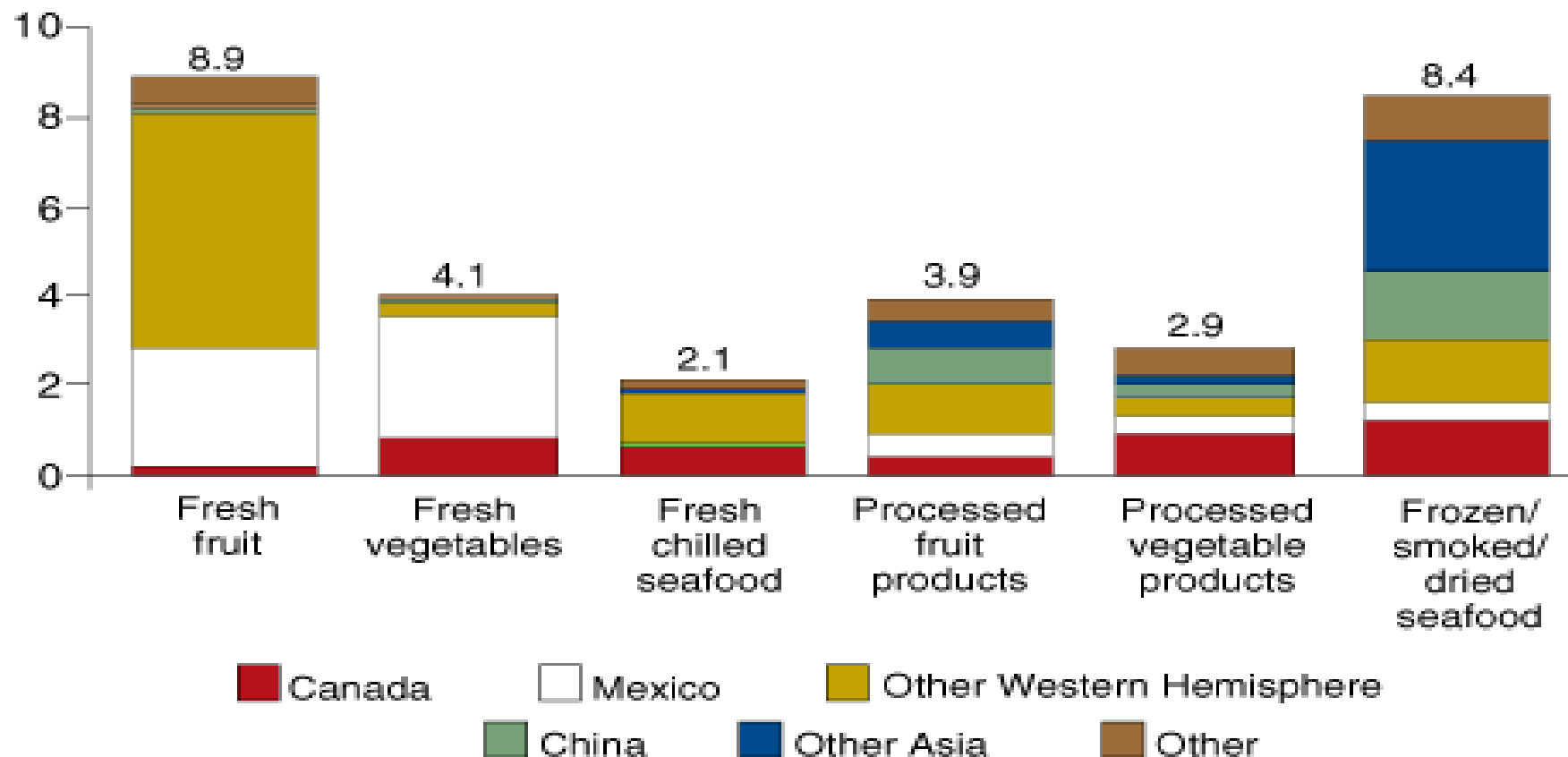


Source: 2012 Census of Agriculture, May 2014

U.S. Food Imports¹⁰

U.S. perishable food imports in 2007 mostly came from neighboring countries

Imports, billion dollars

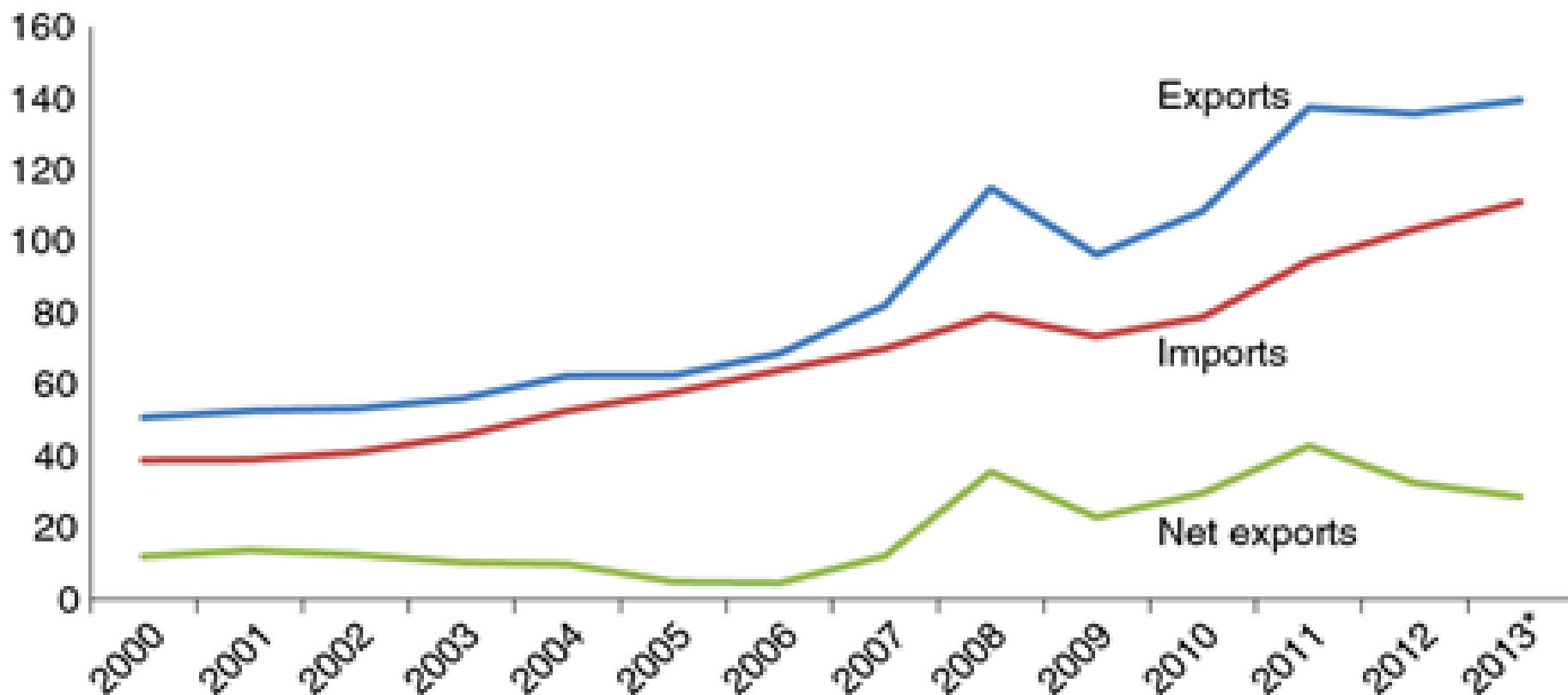


Source: USDA, Economic Research Service classification using data from U.S. Department of Commerce, Census Bureau.

U.S. Agriculture Exports¹¹

U.S. agricultural exports, imports, and trade balance, 2000-13*

Billion dollars



*2013 = forecast through September 2013.

Sources: USDA, Economic Research Service, Foreign Agricultural Trade of the United States;
Outlook for U.S. Agricultural Trade: May 2013.

The State of Global Health & Nutrition



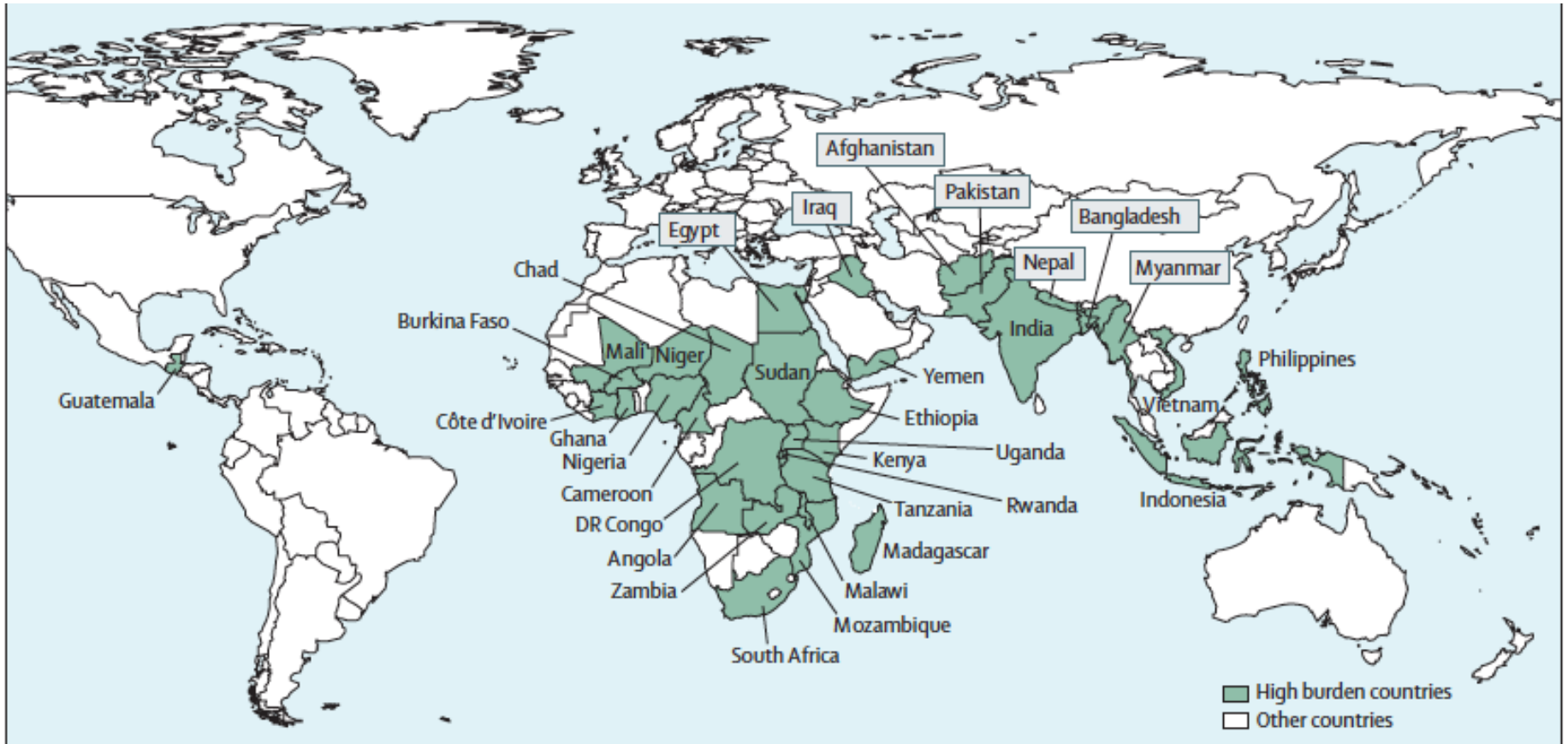
eat right.™

State of Global Health¹²

- **Undernutrition** is responsible for 3 million deaths each year – That's 45% of deaths in children under 5.
- In 2011 there were 165 million children under 5 with **stunted growth**.
- **Suboptimal breastfeeding** results in more than 800,000 child deaths annually.
- Fetal growth restriction causes 12% of annual **neonatal deaths**.

Understanding the Context¹³

34 countries bear 90% of the global burden of undernutrition



Lozano R. Lancet 2012; Lancet. 2012 Dec 15;380(9859):2095-128. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study.

Advances in Agriculture



Benefits of Agriculture Advances



Access to healthy food



Food production



Environmental impact

Who is advancing agriculture innovation to achieve food security and healthy food systems?

- Government
 - Nonprofit organizations/foundations
 - Industry and farmers
-

Government

Advances in Agriculture

USDA Sustainable Agricultural Systems¹⁴

- 1. Integrating sustainability** issues and approaches into a range of **USDA science priorities**, including food security, crop and animal production and protection, bioenergy, climate change, and natural resource management.
 - 2. Building a framework for sustainability data** and information, and supporting research, education, and extension efforts to develop critical scientific and management information to fill gaps in the framework.
-

Sustainable Agricultural Systems, cont'd¹⁴

3. **Advancing the understanding** of local and regional **food systems**, a key part of the **USDA strategy** for rural prosperity and a promising market for connecting producers with consumers, many of whom are interested in farmers and land management.

 4. **Improving** the performance of **organic agriculture** (the largest of the “transformative system” examples described in the NRC report).
-

WHO and FAO^{15,16}



World Health Organization (WHO)
Authority for health within United Nations



Food and Agriculture
Organization of the
United Nations

for a world without hunger

Food and Agriculture
Organization (FAO)

- Works to achieve food and nutrition security globally

Government Nonprofit organizations/foundations Advances in Agriculture

Examples from Academy Position Paper¹⁷⁻²¹



FROM THE ACADEMY Position Paper

Position of the Academy of Nutrition and Dietetics: Nutrition Security in Developing Nations: Sustainable Food, Water, and Health

ABSTRACT

It is the position of the Academy of Nutrition and Dietetics that all people should have consistent access to an appropriately nutritious diet of food and water, coupled with a sanitary environment, adequate health services, and care that ensure a healthy and active life for all household members. The Academy supports policies, systems, programs, and practices that work with developing nations to achieve nutrition security and self-sufficiency while being environmentally and economically sustainable. For nations to achieve nutrition security, all people must have access to a variety of nutritious foods and potable drinking water; knowledge, resources, and skills for healthy living; prevention, treatment, and care for diseases affecting nutrition status; and safety-net systems during crisis situations, such as natural disasters or deleterious social and political systems. More than 2 billion people are micronutrient deficient; 1.5 billion people are overweight or obese; 870 million people have inadequate food energy intake; and 783 million people lack potable drinking water. Adequate nutrient intake is a concern, independent of weight status. Although this article focuses on nutritional deficiencies in developing nations, global solutions for excesses and deficiencies need to be addressed. In an effort to achieve nutrition security, lifestyles, policies, and systems (eg, food, water, health, energy, education/knowledge, and economic) contributing to sustainable resource use, environmental management, health promotion, economic stability, and positive social environments are required. Food and nutrition practitioners can get involved

POSITION STATEMENT

It is the position of the Academy of Nutrition and Dietetics that all people should have consistent access to an appropriately nutritious diet of food and water, coupled with a sanitary environment, adequate health services, and care that ensure a healthy and active life for all household members. The Academy supports policies, systems, programs, and practices that work with developing nations to achieve nutrition security and self-sufficiency while being environmentally and economically sustainable.

Feed the Future

Save & Grow

Urban Harvest

Bangladesh
Homestead Food
Production Program



Nonprofit organizations²²

World Wildlife Fund

Working with business, government and communities to find and influence the adoption of solutions that will improve efficiency in the use of natural resources, reduce waste, and eliminate illegality.

**We have to do more with less.
Much less.**

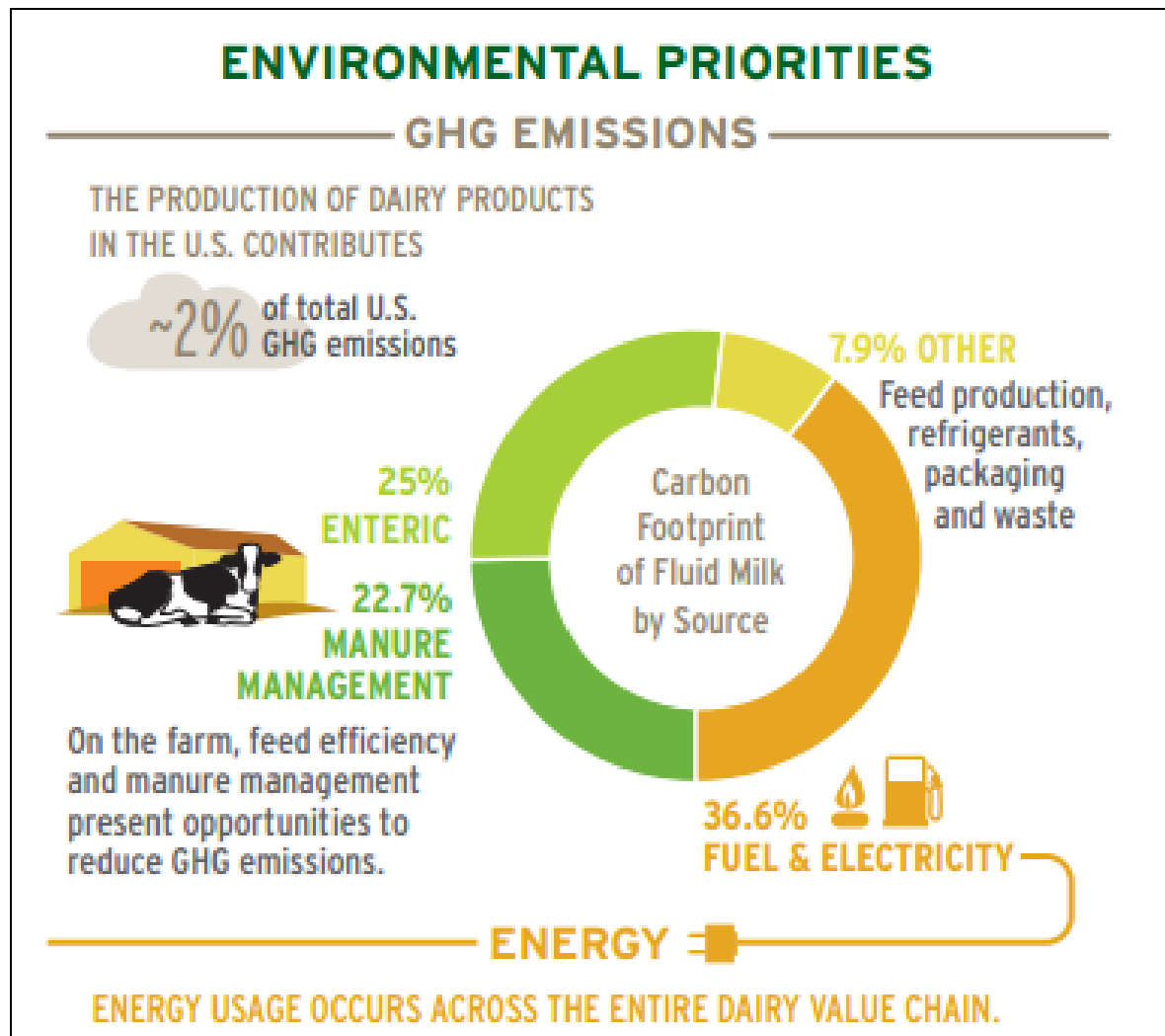
“Supply risk from unsustainable sourcing can destroy reputations, brands, biodiversity, communities and generate expensive legal disputes to companies and government”.



Industry and farmers

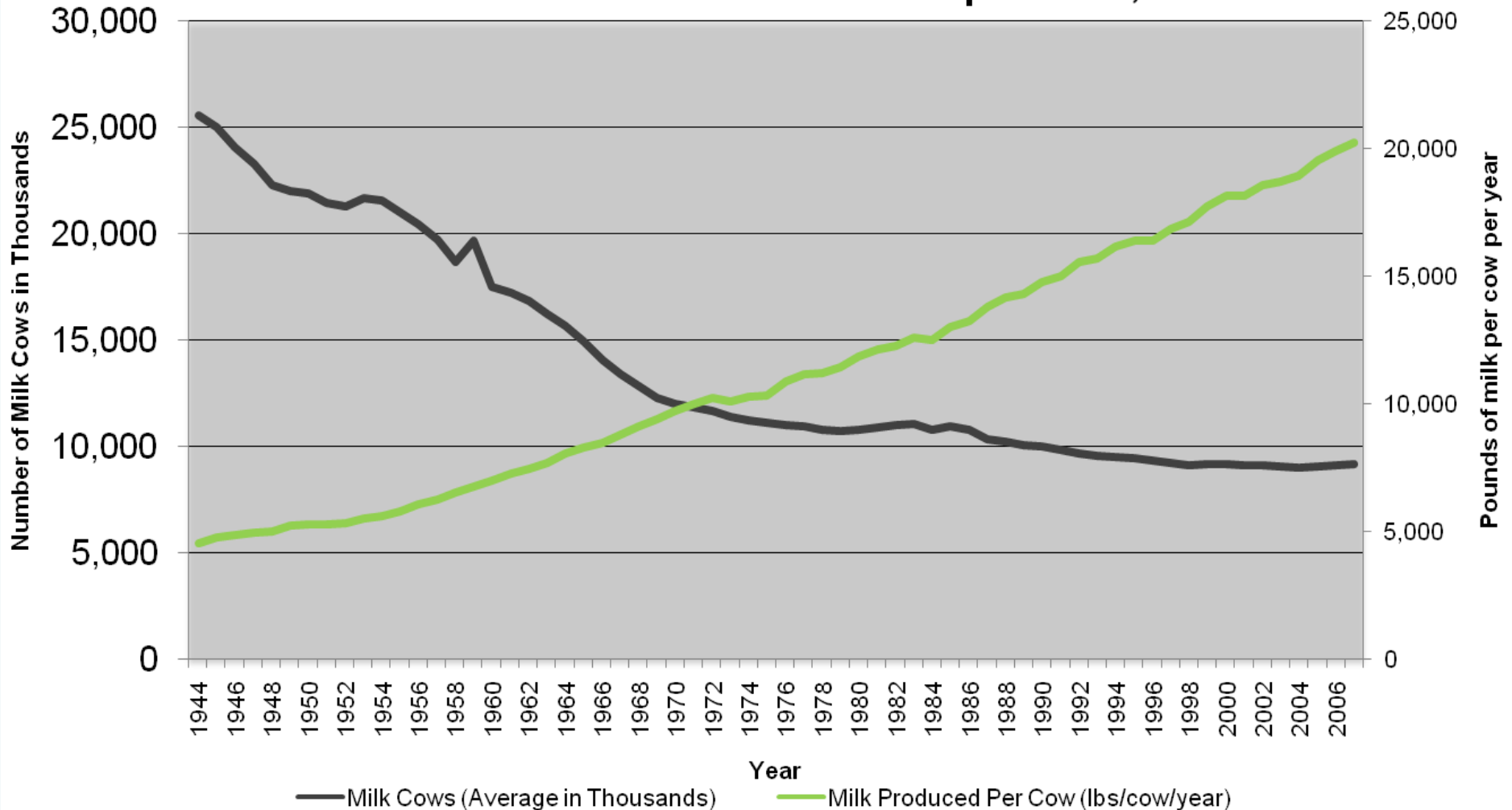
Advances in Agriculture

Industry and farmers²³⁻²⁶



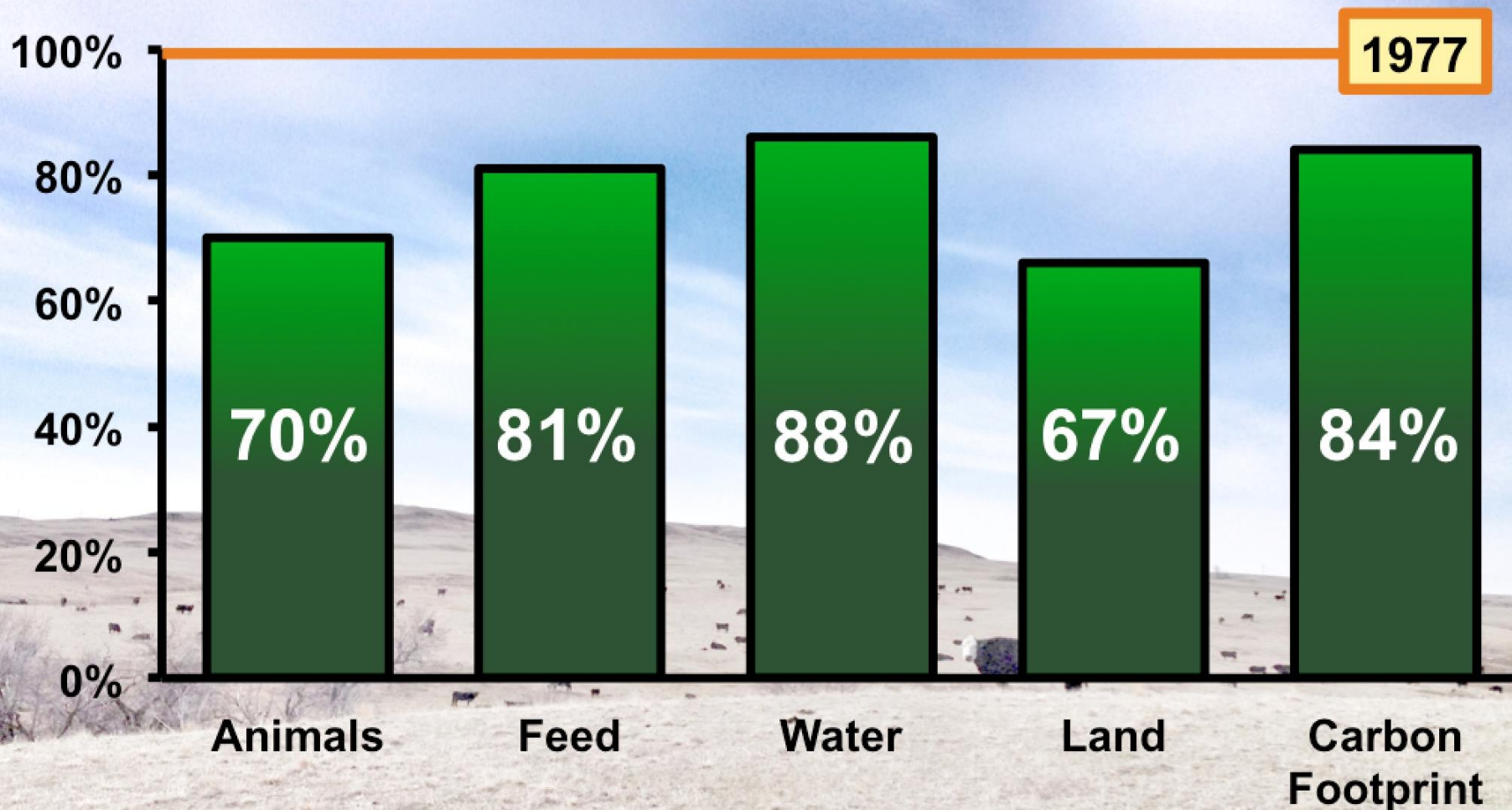
Efficiency²⁷

Total Milk Cows & Milk Production per Cow, 1944-2007



Source: Judith L. Capper, Roger A. Cady, and Dale E. Bauman, *Journal of Animal Science*. Published online first on March 13, 2009.

Environmental Impact of U.S. Beef Production has been Reduced by Improved Productivity



Source: Created by Dr. Jude L. Capper, 2014; Data from: Capper, J. L. (2011). The environmental impact of U.S. beef production: 1977 compared with 2007. *J. Anim. Sci.*

Examples of Agriculture Innovations

Innovations in agriculture technology help to use fewer resources, including fertilizer, pesticides, water, etc.

Examples:

- Technology to maximize crop space
- Satellite imagery to survey soil
- Technology to increase drought tolerance
- Precision agriculture tools to reduce inputs and improve efficiency



In Summary:

- US Farmers & the State of US Farming
 - State of Global Health & Nutrition
 - Innovations in Agriculture
 - Government
 - Nonprofit organizations/foundations
 - Industry and farmers
-

What Can Academy Members Do?



Amy Myrdal Miller, MS, RDN, FAND
Founder & President
Farmer's Daughter Consulting, LLC

Disclosure

Financial Disclosures

- American Beverage Association
 - The Culinary Institute of America
 - McDonald's USA (*Northern California Owner-Operators Cooperative*)
 - Monsanto L.E.A.D. Network Member
 - National Dairy Council Ambassador
 - Northarvest Bean Growers Association
 - Passionate Food Group
 - *Produce Business* magazine
 - Star Ginger Restaurants
 - Plus honoraria for speaking
-













What Can Academy Members Do?



- **Educate**



- **Advocate**



- **Communicate**

Educate through Events

Maryland RDNs Connect with Farm Women through Common Ground™



Educate through Events

Ohio RDs Experienced the Journey of Milk from Farm to Lunch Tray



Educate through Events

2014 Wheat Foods Council “Wheat Safari”



Educate through Events

2014 California Beef Council Beef Sustainability Event



Dr. Frank Mitloehner, UC Davis

Beef Sustainability CE Event Attendees



Educate through DPGs



FROM THE ACADEMY Position Paper

Position of the Academy of Nutrition and Dietetics: Nutrition Security in Developing Nations: Sustainable Food, Water, and Health

ABSTRACT

It is the position of the Academy of Nutrition and Dietetics that all people should have consistent access to an appropriately nutritious diet of food and water, coupled with a sanitary environment, adequate housing, and a safe and secure life for all household members, and practices that work with and will sufficiently while living and move to achieve nutrition security, at food and potable drinking water, to prevention, treatment, and care for systems during crises situations, and fiscal systems. More than 5 billion people are overweight or obese; 870 million 160 million people lack potable drinking water; and 1 billion people live in developing nations, global solutions to achieve nutrition security, health, energy, education, knowledge, social and environmental management, and social environments are required to prevent and implement effective practices that support individual and community health.

POSITION STATEMENT

It is the position of the Academy of Nutrition and Dietetics that all people should have consistent access to an appropriately nutritious diet of food and water, coupled with a sanitary environment, adequate housing, and a safe and secure life for all household members, and practices that work with and will sufficiently while living and move to achieve nutrition security, at food and potable drinking water, to prevention, treatment, and care for systems during crises situations, and fiscal systems. More than 5 billion people are overweight or obese; 870 million 160 million people lack potable drinking water; and 1 billion people live in developing nations, global solutions to achieve nutrition security, health, energy, education, knowledge, social and environmental management, and social environments are required to prevent and implement effective practices that support individual and community health.

NUTRITION SECURITY is when adequate natural resources, food, water, and an appropriately nutritious diet, potable drinking water, and sanitary environments and adequate health services and care, in order to have a healthy and active life for household members. "Nutrition security requires that all people have access to a variety of nutritious foods and potable drinking water, knowledge, resources, and skills for security to prevention, treatment, and care for systems during crises situations, such as natural disasters or economic crisis and political systems."

2012-2013
Vol. 10, No. 1, Spring 2013

© 2013 by the Academy of Nutrition and Dietetics

Tastings

Eat, Drink, Serve, and Learn...

Food & Culinary Professionals
Academy of Nutrition and Dietetics

Fall 2013

Creating Sustainable Food Systems: Case Study from the Dairy Industry



In This Issue

Dear Members

F&C (Fall 2013)

Editor's Letter

Member Spotlight

Dear Members

Members Go On

Editor's Note

Recipe

Member Spotlight

Dear Members

F&C (Fall 2013)

Editor's Letter

Member Spotlight

Dear Members

F&C (Fall 2013)

Editor's Letter

Member Spotlight

Dear Members

F&C (Fall 2013)

Editor's Letter

Member Spotlight

Dear Members

F&C (Fall 2013)

Editor's Letter

Member Spotlight

Dear Members

F&C (Fall 2013)

Editor's Letter

Member Spotlight

Dear Members

F&C (Fall 2013)

Editor's Letter

Member Spotlight

Dear Members

F&C (Fall 2013)

Editor's Letter

Member Spotlight

HUNGER AND ENVIRONMENTAL NUTRITION DPG

Webinar Series

The Role of the Dietitian in the Local Food Movement

February 11, 2014



Hunger and Environmental Nutrition

Academy of Nutrition and Dietetics

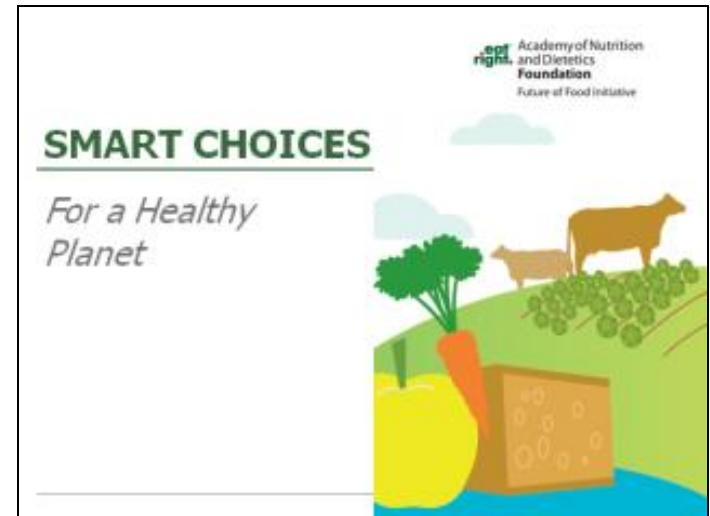
www.HENdpg.org

- Get involved in DPGs strongly supporting agricultural issues, including:
 - Hunger and Environmental Nutrition (HEN)
 - Food & Culinary Professionals (FCP) Ag Subgroup
- Find out more about Future of Food and view recorded webinars
www.eatrightfoundation.org

Educate others!

SMART CHOICES For a Healthy Planet Toolkit

- 25-minute PowerPoint presentation plus 5-minute suggested activity
- Target audience: adults or mature teens
- Toolkit includes notes pages and downloadable handout
- Available in English and Spanish
- **FREE!**
- Available to download at www.kidseatright.org/volunteer



Educate: Ag in the Classroom²⁹



www.agclassroom.org

Educate: Farm to School Programs³⁰

Bringing the farm to school



4,322
districts

40,328
schools

23,513,237
children

www.fns.usda.gov/farmentoschool

Advocate: Promote Grower-Buyer

Grower-Buyer Expos

- Expand opportunities for more local products in schools, hospitals, institutions or supermarkets.
- Opportunity for growers to increase local distribution.
- Excellent way for RDNs to connect with farmers.



Advocate: Public Policy³, 31-35

- **Supplemental Nutrition Assistance Program (SNAP)**
 - *Supplemental income for 47 million low-income Americans*
 - **The Emergency Food Assistance Program (TEFAP)**
 - *Supplemental food for emergency situations, provided through food banks*
 - **Commodity Supplemental Food Program (CSFP)**
 - *Provides USDA Foods to 575,000 low-income seniors*
 - **Fresh Fruit and Vegetable Program (FFVP)**
 - *Provides funds for free F&V snacks to school children in low-income districts*
 - **SNAP Nutrition Education (SNAP-Ed)**
 - *Provides nutrition education for low-income families*
 - **Beginning Farmer and Rancher Development Program**
 - *Provides grant funds for training programs for new farmers & ranchers*
 - **Conservation Stewardship Program (CSP)**
 - *Provides funding for farmers & ranchers that help conserve natural resources*
 - **Environmental Quality Incentives Program (EQIP)**
 - *Provides incentives for farmers & ranchers to implement conservation practices*
 - **ACA/IRS: Nonprofit hospitals can now claim tax credits for nutrition aid provided to local communities**
-

Advocate: Public Policy³⁶



Academy of Nutrition
and Dietetics

Media

EatRight Careers

News Center

Search



Advocacy

Leadership

Practice

Research

Career

Member Updates >

My Academy Toolbar

★ Add to Favorites

Advocacy

- Disease Prevention and Treatment +
- Lifecycle Nutrition +
- Healthy Food Systems and Access +
- Quality Health Care +
- Action Center +
- Political Action Committee +

Grassroots Manager



With just a few clicks of your mouse, you can have your voice heard. Use the Academy's **Grassroots Manager** program to email a letter to your member of Congress. The Academy will often provide pre-written letters for you to send to your representatives asking for their support in legislation dealing with food, nutrition and health. It is important that Academy members be heard. If you don't let your member of Congress know what is important to you, then they will not know.

Take Action >

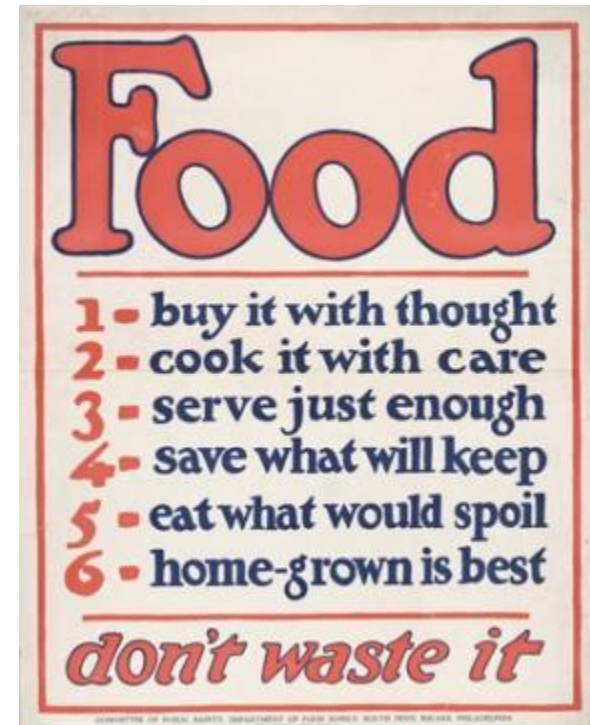
Tags Advocacy, Action Center, Local Advocacy

**FAST &
EASY!**

Communicate: Food Waste³⁷

USDA & EPA “U.S. Food Waste Challenge”

- **Reduce** food waste by improving product development, storage, shopping/ordering, marketing, labeling, and cooking methods.
- **Recover** food waste by connecting potential food donors to hunger relief organizations like food banks and pantries.
- **Recycle** food waste to feed animals or to create compost, bioenergy and natural fertilizers.
- <http://www.usda.gov/oce/foodwaste/>



Communicate: Farm to Table Dinners



Communicate: Volunteer



California State University, Sacramento students volunteering at a “Nutrition Fuels Fitness” race. Race proceeds benefited local organizations working to reduce childhood obesity.

Communicate: Social Media

Ashley Colpaart MS RD @ashleyrdtx · 5h

Where Food Begins. First-ever World Soils Day by UN kickstarts 2015 International Year of Soils. [#rdchat](#)



Dayle Hayes @SchoolMealsRock · Dec 5

Day #4 [#RealSchoolFood](#): IT'S ALL ABOUT LOCAL [wp.me/p27H7R-jR](#) @FoodCorps makes @FarmtoSchool work @FoodCorpsMT



2 2

View more photos and videos

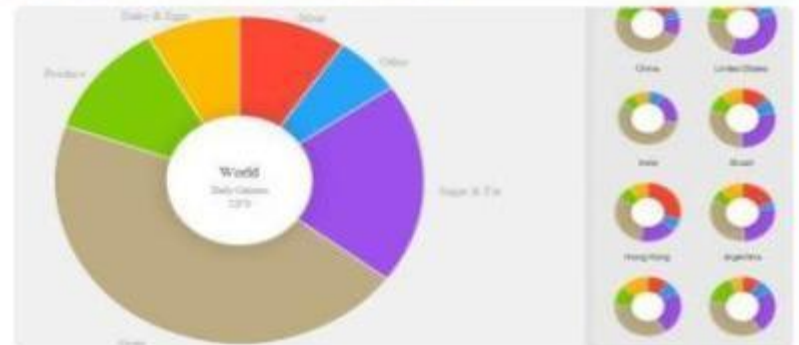
The Foodie Farmer
 Yesterday · 4h

Sold 22,500 bushels of [#RealFood](#) fresh green beans from our [#EasternShore](#) [#Maryland](#) farm this year. [#FarmToGroceryStore](#)



Mary-Jo Drenwater RD retweeted

[FAO statistics](#) @FAOstatistics · Dec 1
 Interactive [#infographic](#) by @NatGeo on what the world eats
[on.natgeo.com/1rdXmRk](#) [#FutureofFood](#)



14 5

View more photos and videos

Communicate: Share Resources



Agricultural
Research
Service



<http://www.ers.usda.gov/>



<http://www.ars.usda.gov/main/main.htm>

<http://www.csrees.usda.gov/Extension/>



Food and Agriculture Organization
of the United Nations

www.fao.org

<http://www.aplu.org/document.doc?id=780>

In Summary:



- **Educate**



- **Advocate**



- **Communicate**

**Take the
Challenge!**

Changing the Way We Look at Agriculture:

Opportunities for RDNs

QUESTIONS?



@EatRightPRO

References

1. USDA Census of Agriculture. 2012 Census Ag Atlas Maps
http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Ag_Atlas_Maps/Operators/ Accessed 6-13-14.
 2. USDA Economic Research Service.
<http://www.ers.usda.gov/topics/natural-resources-environment/organic-agriculture/organic-trade.aspx#.U5oL6vldUdo> Accessed 6-13-14.
 3. USDA. 2012 Census of Agriculture Highlights. Farm Demographics. ACH 12-3/May 2014.
http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farm_Demographics/Highlights_Farm_Demographics.pdf. Accessed 10-9-14.
 4. Ilg, R. The Changing Face of Farm Employment. *Monthly Labor Review*. 1995. <http://stats.bls.gov/mlr/1995/04/art1full.pdf>
Accessed 6-13-14.
-

References, continued

5. 2012 Census of Agriculture
http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Ag_Atlas_Maps/Operators/Characteristics/12-M123-RGBChor-largetext.pdf. Accessed 10-3-14.
 6. USDA Economic Research Service.
http://www.ers.usda.gov/topics/farm-economy/beginning-disadvantaged-farmers/beginning-farmers-age-distribution-of-farmers.aspx#.U5JE_vldUdo. Accessed 12-31-15.
 7. Patrick, K. USDA Economic Research Service.
http://www.usda.gov/oce/forum/2015_Speeches/KPatrick.pdf. Accessed 12-31-15.
 8. USDA 2012 Census of Agriculture Infographic.
http://www.agcensus.usda.gov/Partners/Infographics/Faces_of_Agriculture.pdf. Accessed 12-31-15.
-

References, continued

9. USDA Economic Research Service.
<http://www.ers.usda.gov/publications/err-economic-research-report/err152.aspx#.U9b4MONdVIE>. Accessed 12-31-15.
 10. USDA Economic Research Service.
<http://www.ers.usda.gov/amber-waves/2009-september/data-feature-trade-data-show-value,-variety,-and-sources-of-us-food-imports.aspx#.U5ocZvldUd>. Accessed 12-31-15.
 11. USDA Economic Research Service.
http://www.ers.usda.gov/amber-waves/2013-august/developing-countries-dominate-world-demand-for-agricultural-products.aspx#.U5Jl5_IdUdo. Accessed 12-31-15.
 12. The Lancet. June 2013.
 13. Lozano R. Lancet 2012; Lancet. 2012 Dec 15;380(9859):2095-128. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study.
-

References, continued

14. USDA Research, Education and Economics Office of the Chief Scientist. Sustainable Agriculture Systems Science White Paper. July 24, 2012. <http://www.usda.gov/documents/sustainable-agriculture-science-white-paper.pdf>. Accessed 12-31-15.
 15. World Health Organization Website. <http://www.who.int/en/>. Accessed 12-31-15.
 16. Food and Agriculture Organization of the United Nations Website. <http://www.fao.org/home/en/>. Accessed 12-31-15.
 17. Feed the Future Website. www.feedthefuture.gov. Accessed 10-13-14.
 18. Food and Agriculture Organization of the United Nations. Save and Grow Website. <http://www.fao.org/ag/save-and-grow/>. Accessed 10-13-14.
 19. Urban Harvest Website. www.urbanharvest.co.za. Accessed 9-22-14.
-

References, continued

20. Helen Keller International's Homestead Food Production Program Website. <http://www.hki.org/reducing-malnutrition/homestead-food-production/>. Accessed 9-22-14.
 21. Position of the Academy of Nutrition and Dietetics: Nutrition Security in Developing Nations: Sustainable Food, Water, and Health. JAND. 2013; 113 (4); 581-595.
 22. World Wildlife Fund Website. www.worldwildlife.org. Accessed 12-31-15.
 23. USDA. 2012. Data and Statistics.
[http://www.nass.usda.gov/Data and Statistics/Quick Stats/index.asp](http://www.nass.usda.gov/Data_and_Statistics/Quick_Stats/index.asp). Accessed 3-14-12.
 24. Innovation Center for U.S. Dairy Sustainability Website.
<http://www.usdairy.com/sustainability/industry-commitment/about#{A70F35E7-4F7F-4D97-A829-783959D62F50}>. Accessed 10-2-14.
-

References, continued

25. Henderson et al., U.S. Fluid Milk Comprehensive LCA, University of Michigan and University of Arkansas, 2012.
26. Thoma et al., Greenhouse Gas Emissions of Fluid Milk, 2010.
27. Judith L. Capper, Roger A. Cady, and Dale E. Bauman, Journal of Animal Science. Published online first on March 13, 2009.
28. Capper, J.L. The environmental impact of U.S. beef-production: 1977 compared with 2017; Journal of Animal Science. 2011.
29. Ag in the Classroom Website. www.agclassroom.org. Accessed 12-31-15.
30. USDA Farm to School Website.
www.fns.usda.gov/farmtoschool. Accessed 12-31-15.
31. USDA. 2012 Census of Agriculture Highlights. Farm Demographics. ACH 12-3/May 2014.
http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farm_Demographics/Highlights_Farm_Demographics.pdf. Accessed 10-9-14.

References, continued

32. USDA Supplemental Nutrition Assistance Program Website.
<http://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap>. Accessed 12-31-15.
 33. USDA Evaluation of the Fresh Fruit and Vegetable Program Website. <http://www.fns.usda.gov/evaluation-fresh-fruit-and-vegetable-program>. Accessed 12-31-15.
 34. Academy of Nutrition and Dietetics, Share Our Strength, and Society for Nutrition Education and Behavior. Federal Nutrition Education Programs: SNAP-Education Builds Knowledge, Reaches Millions, and Secures our Country's Health Investment. http://www.panen.org/sites/default/files/SNAP-Ed_Summary.pdf. Accessed 12-31-15.
 35. USDA Natural Resources Conservation Service Website. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/?&cid=stelprdb1048817>. Accessed 12-31-15.
-

References, continued

36. Academy of Nutrition and Dietetics Grassroots Manager Webpage.

<http://www.eatrightpro.org/resource/advocacy/action-center/local-advocacy/grassroots-manager>. Accessed 12-31-15.

37. USDA Office of the Chief Economist Webpage.

<http://www.usda.gov/oce/foodwaste/faqs.htm>. Accessed 12-31-15.
